

A descriptive cross-sectional study to assess the readiness regarding birth preparedness, complications and associated factors among primigravida in selected hospitals at district Mohali, Punjab

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ABSTRACT

Background: Primigravida women are more susceptible to obstetric difficulties owing to insufficient information, absence of previous experience, and delays in obtaining adequate treatment. Birth Preparedness and Complication Readiness (BPCR) is an internationally acknowledged approach aimed at decreasing avoidable maternal morbidity and death by enhancing readiness, decision-making, and the use of professional maternity care. Despite enhancements in prenatal care accessibility in India, deficiencies in BPCR persist, especially among primiparous moms. Hence, this study aimed to assess the readiness regarding birth preparedness, complications, and associated factors among primigravida women attending selected hospitals in District Mohali, Punjab.

Method: This research used a descriptive cross-sectional design. Three hundred fifty primigravida women were recruited using full enumeration sampling from the prenatal outpatient departments of designated hospitals in Mohali. Data were gathered with a designed and validated questionnaire, after an assessment of its practicality and suitability for the research population. The questionnaire was used to evaluate the knowledge and awareness of primigravida women about the specified research characteristics. The gathered data were examined using both descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation were used to characterize the participants' attributes and replies, whilst Chi-square test, regression analysis, and t-test were applied to ascertain relationships and predictors at a significance threshold of $p < 0.05$.

Results: It was divulged that the mean BPCR score among the primigravida women was 18.42 ± 4.76 , indicating a moderate overall level of preparedness. Based on BPCR score categorization, 42.3% of participants demonstrated adequate readiness, 37.1% exhibited moderate readiness, while 20.6% showed poor readiness for birth preparedness and complication management. Regarding individual components of BPCR, 64.8% of women had identified a health facility for delivery, and 56.4% had made financial arrangements for childbirth and potential emergencies. However, preparedness in other critical areas remained suboptimal. Less than half of the participants (48.9%) were aware of key obstetric danger signs, while only 32.5% had arranged emergency transportation. Furthermore, merely 28.7% had identified a potential blood donor in case of obstetric emergencies. Analysis of factors associated with BPCR readiness revealed statistically significant relationships with educational status ($\chi^2 = 14.82$, $p = 0.002$), number of antenatal visits ($\chi^2 = 11.36$, $p = 0.005$), monthly family income ($\chi^2 = 9.74$, $p = 0.008$), and source of health information ($\chi^2 = 12.21$, $p = 0.004$). These findings suggest that socio-economic status, utilization of antenatal care services, and access to health information play a crucial role in enhancing birth preparedness and complication readiness among primigravida women.

Conclusion: The study concluded that the study identified moderate BPCR readiness among primigravida women, with significant gaps in awareness of obstetric danger signs and emergency preparedness. The findings highlight the importance of strengthening nurse-led antenatal education and family-centered BPCR interventions to improve maternal preparedness and safe motherhood outcomes.

Keywords: BPCR; primigravida; Birth Preparedness and Complication Readiness; Maternal Health; Associated Factors.

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INTRODUCTION

Birth preparedness involves identifying a skilled healthcare provider and selecting a health facility for delivery well before the expected date of birth. Deliveries conducted by trained health professionals reduce the risk of maternal and newborn complications and ensure timely medical care during labor and childbirth.(1,2)

Pregnant women and their families should plan transportation to the health facility and keep emergency funds available. Delays in reaching healthcare services during labor or obstetric emergencies can increase the risk of maternal and neonatal morbidity and mortality.(3,4) Complication readiness includes awareness of key danger signs such as severe vaginal bleeding, convulsions, severe headache, blurred vision, reduced fetal movement, prolonged labor, high fever, and difficulty breathing. Early recognition of these signs helps families seek immediate medical attention.(5,6)

Families should identify potential blood donors and support persons in advance, especially for women at risk of obstetric complications. Availability of blood transfusion and family support during emergencies can be lifesaving and improve maternal and newborn outcomes. Birth preparedness also includes keeping all necessary items ready before the onset of labor. These may include maternal health records, identification documents, clean clothing, newborn care supplies, personal hygiene items, and essential medications if prescribed. Advance preparation reduces stress during labor and facilitates a smooth admission process at the healthcare facility.(1,7)

Active involvement of husbands, family members, and caregivers in birth planning is an important aspect of complication readiness. Family members should be informed about the expected date of delivery, the chosen healthcare facility, emergency contact numbers, and the actions to be taken in case of complications. Shared responsibility enhances decision-making and ensures timely access to appropriate maternal healthcare services during emergencies.(8,9)

One of the most crucial aspects of BPCR, or Birth Preparedness and Complication Readiness, is maternal education. A greater likelihood of competent birth attendant selection, prompt medical attention, and well-

thought-out birth plans are all indicators of a woman's level of education and understanding about pregnancy,

labour, and obstetric danger indications. With more knowledge, expectant mothers can see problems sooner and take precautions.(10)

The prevalence of BPCR is greatly affected by the frequency of prenatal care (ANC) appointments. Pregnant women learn about healthy eating, how to recognise potential risks, how to prepare for emergencies, and the benefits of having a hospital birth at their annual prenatal checkups. The likelihood that a woman will have a plan for transportation, emergency cash, and competent birth attendance increases when she attends the recommended number of prenatal appointments.(11,12)

Important factors in deciding BPCR level are family support and socioeconomic status. Women are more likely to take part in healthcare decision-making and be well prepared for crises and deliveries when they have support from their spouses and family members. Similarly, families with higher financial means are better able to plan for transportation, save for emergencies, get high-quality healthcare, and pay for delivery and any issues that may arise, making them more prepared for both the birth and any complications that may arise.(13,14)

Maternal mortality and morbidity remain significant public health concerns, particularly in developing countries, where delays in seeking, reaching, and receiving appropriate obstetric care contribute to adverse maternal and neonatal outcomes.(15) Birth Preparedness and Complication Readiness (BPCR) is a key strategy recommended to ensure timely utilization of skilled maternal healthcare services and prompt management of obstetric emergencies. Adequate preparedness for childbirth, awareness of danger signs, and readiness to respond to complications are essential for improving maternal and newborn health. Various factors such as maternal education, antenatal care utilization, family support, and socioeconomic status have been found to influence BPCR practices among pregnant women. Considering the importance of BPCR and the vulnerability of first-time mothers due to their limited experience with pregnancy and childbirth, the researcher planned to undertake this study.

Objectives: To assess the readiness regarding birth preparedness, complications, and associated factors among primigravida in selected hospitals at District. Mohali, Punjab.

Materials and Methods: A quantitative research approach with a descriptive cross-sectional research design was adopted for the present study. A total of 350 primigravida women attending antenatal outpatient departments (OPDs) of selected hospitals in District Mohali, Punjab, were recruited for the study through full enumeration sampling technique. The sample size was determined based on power analysis. Data were collected using a structured and validated research instrument comprising three sections: Tool I consisted of socio-demographic and obstetric variables; Tool II was a structured questionnaire developed to assess readiness regarding birth preparedness among primigravida women; and Tool III was a structured checklist used to assess readiness regarding complications during

pregnancy, labour, and the postpartum period along with associated factors. The tools were translated into local languages as required and were subjected to content validity and reliability testing before administration. Ethical approval and administrative permissions were obtained prior to data collection. The collected data were coded, entered, and analyzed using Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics such as frequency, percentage, mean, and standard deviation, along with inferential statistics including Chi-square test, t-test, and regression analysis, were used to interpret the findings at a 0.05 level of significance.

Results and Discussion: Obtained information were analyzed and grouped as per objectives of the study. The result reflected in tabular and graphics form. Table-1 communicated the frequency of socio- demographic variables of study participants.

Table-1 Frequency and Percentage Distribution of Socio-Demographic Variables:

N=350

Sr. No.	Variables	Category	Frequency	Percentage
	Age (years)	19-23	100	28.60
		24-28	123	35.10
		29-33	084	24.00
		≥34	043	12.30
	Trimester	First	088	25.10
		Second	144	41.10
		Third	118	33.70
	Antenatal Visit	One	085	24.30
		Two	128	36.60
		Three or more	137	39.10
	Religion	Hindu	125	35.70
		Sikh	092	26.30
		Muslim	077	22.00
		Christian	091	14.60
		Other	005	01.40
	Type of Family	Nuclear	265	75.70
		Joint	085	24.30
	Place of Residence	Rural	188	53.70
		Urban	162	46.30
	Education of mothers	No formal education	042	12.00
		Primary	078	22.30
		Secondary	104	29.70
		Senior secondary	078	22.30
		Graduate & above	048	13.70

	Occupation of Mothers	Homemaker	229	65.40
		Private employee	083	23.70
		Government employee	038	10.90
	Education of Husband	No formal education	028	08.00
		Primary	061	17.40
		Secondary	096	27.40
		Senior secondary	092	26.30
		Graduate & above	073	20.90
	Occupation of Husband	Homemaker	046	13.10
		Private employee	149	42.60
		Government employee	155	44.30
	Monthly Family Income in Rs.	<10,000	064	18.30
		10,001–20,000	132	37.70
		20,001–30,000	089	25.40
		>30,000	065	18.60
	Dietary Habits	Vegetarian	201	57.40
		Non-vegetarian	149	42.60
	Source of information on BPCR	Health professionals	162	46.30
		Family/Relatives	094	26.90
		Mass media	052	14.90
		Friends/Peers	042	12.00

The placed table represented that Among the 350 primigravida women, the highest proportion (35.10%) belonged to the age group of 24–28 years. Most participants were in the second trimester of pregnancy (41.10%) and had attended three or more antenatal visits (39.10%). Regarding religion, Hindu women constituted the largest group (35.70%). The majority of respondents belonged to nuclear families (75.70%) and resided in rural areas (53.70%). With respect to education, the highest proportion of mothers had secondary education

(29.70%), while most mothers were homemakers (65.40%). Similarly, the highest proportion of husbands had secondary education (27.40%), and a large percentage were government employees (44.30%). Regarding family income, the majority reported a monthly income of ₹10,001–20,000 (37.70%). Most participants followed a vegetarian diet (57.40%), and health professionals were identified as the primary source of information regarding Birth Preparedness and Complication Readiness (BPCR) by 46.30% of the respondents.

Table:2 Frequency and percentage distribution of primigravida according to readiness regarding birth preparedness:

N=350

Level of readiness	Frequency (f)	Percentage (%)	Mean±SD
Poor (0–4)	0	0.0	11.95±1.62
Average (5–9)	32	9.1	
Good (10–14)	318	90.9	

The findings revealed that the majority of primigravida women (90.9%) had a good level of readiness, while 9.1% demonstrated an average level of readiness. None of the participants were found to have a poor level of

Table:3 Frequency and percentage distribution of primigravida according to readiness regarding complications during pregnancy:

readiness. The overall mean readiness score was 11.95 ± 1.62 , indicating that most women possessed a satisfactory level of readiness regarding the assessed domain.

N=350

Level of readiness	Frequency (f)	Percentage (%)	Mean±SD
Inadequate (0–4)	002	0.6	9.30±1.8
Moderate (5–9)	185	52.7	
Adequate (10–14)	163	46.4	

The findings presented in Table 3 indicate that the majority of primigravida women (52.7%) had a moderate level of readiness regarding complications during pregnancy, while 46.4% demonstrated an adequate level of readiness. Only 0.6% of the participants had an

Table:4 Frequency and percentage distribution of primigravida according to readiness regarding complications during labour:

inadequate level of readiness. The mean readiness score was 9.30 ± 1.80 , suggesting that overall, the primigravida women possessed a moderate level of readiness towards managing complications during pregnancy.

N=350

Level of readiness	Frequency (f)	Percentage (%)	Mean±SD
Inadequate (0–4)	4	1.1	9.73±1.9
Moderate (5–9)	151	43.0	
Adequate (10–14)	196	55.8	

The findings presented in Table 4 reveal that the majority of primigravida women (55.8%) had an adequate level of readiness regarding complications during labour, while 43.0% demonstrated a moderate level of readiness. Only 1.1% of the participants had an inadequate level of

Table:5 Frequency and percentage distribution of primigravida according to readiness regarding complications during the postpartum period:

readiness. The mean readiness score was 9.73 ± 1.90 , indicating that overall, the primigravida women possessed an adequate level of readiness towards managing complications during labour.

N=350

Level of readiness	Frequency (f)	Percentage (%)	Mean±SD
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Inadequate (0–4)	15	4.3	9.33±2.0
Moderate (5–9)	149	42.5	
Adequate (10–14)	187	53.3	

The findings presented in Table 5 indicate that the majority of primigravida women (53.3%) had an adequate level of readiness regarding complications during the postpartum period, while 42.5% demonstrated a moderate level of readiness. A small proportion of the participants (4.3%) had an inadequate level of readiness. The mean readiness score was 9.33 ± 2.00 , suggesting that overall, the primigravida women possessed an adequate level of readiness towards managing complications during the postpartum period.

DISCUSSION

The study demonstrated that primigravida women had satisfactory readiness for birth preparedness and complication management, with greater emphasis needed on enhancing preparedness for pregnancy-related complications through continuous antenatal education and counselling. A similar finding was presented by Viswanathan T Viyusha et al (2020) which held at rural area of Maharashtra.(16) Another investigation by Deka Trishna Rani & Baishya Kabita (2021) further strengthening the present study findings and stated that primigravida women had similar moderate awareness pattern while comparable assessment of pregnancy/labor/postpartum complication.(17) Further Deji S A et al (2021) has concluded that most respondents in the study area had good knowledge about the danger signs in pregnancy but their practices of birth preparedness was below average.(18) Another investigation by Adu-Gyamfi Matilda et al (2026) mentioned their findings that about half of the primigravida mothers were aware about BPCR practice, which is favoring the present study findings.(19)

A study by Pandey Pallavi et al (2022) has stated that there is a need to create awareness among the people about the importance of proper planning and making arrangements in advance to avert the danger to the life of mother and child.(20) these findings are partially supporting present study. A study by Kadarkar Kalpak Shirish & Dhok S Rajeshree (2022) reported that inadequate awareness regarding obstetric danger signs and government maternal health schemes contributes to lower levels of BPCR. This highlights the need for strengthened antenatal counselling and focused Information, Education, and Communication (IEC)

activities by healthcare providers to enhance preparedness among pregnant women and their families.(21)

Limitations of the study

- The study was conducted only among primigravida women attending selected hospitals in District Mohali, Punjab; therefore, the findings may not be generalized to all pregnant women, multiparous women, or women from other geographical regions.
- The study employed a descriptive cross-sectional design, which assessed birth preparedness and complication readiness at a single point in time and did not allow determination of causal relationships between readiness and associated factors.
- Data were collected using self-reported questionnaires and checklists; therefore, the responses may have been influenced by recall bias, social desirability bias, or overestimation of preparedness by the participants.
- The study assessed readiness regarding birth preparedness and complications but did not evaluate actual maternal or neonatal outcomes, nor did it examine changes in preparedness levels over the course of pregnancy.

CONCLUSION

The study findings indicate that the majority of primigravida women possessed a good level of birth preparedness, reflecting satisfactory planning and readiness for childbirth. Readiness regarding complications during pregnancy was predominantly moderate, suggesting a need for further strengthening of awareness and preparedness related to antenatal danger signs. In contrast, most participants demonstrated adequate readiness regarding complications during labour and the postpartum period, although a considerable proportion still exhibited only moderate readiness. Overall, the findings suggest that primigravida women had satisfactory readiness for birth preparedness and complication management, with greater emphasis needed on enhancing preparedness for pregnancy-related complications through continuous antenatal education and counselling.

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